

Having thus defined the invention, it is claimed:

1) In a detachable, throw away nozzle for use in an airless, liquid spray dispensing gun  
having a pair of valved openings through which pressurized liquids are dispensed, said nozzle  
5 having an inlet chamber section adjacent to and in sealing engagement with said valved  
openings, a mixing chamber section adjacent said inlet chamber and containing a static mixer  
therein, and a dispensing tip adjacent said mixing chamber through which said liquids are  
dispensed from said nozzle, the improvement comprising:

a) said dispensing tip, said mixing chamber and said inlet chamber extending  
10 along a longitudinal axis and generally symmetrical about said longitudinal axis;

b) said dispensing tip defined by a longitudinally extending interior passage  
through which said liquids are dispensed, said tip passage having a generally circular  
entrance end at the intersection of said tip passage with said mixing chamber and a  
longitudinally opposite exit end having a rectangular dispensing opening defined by a pair  
15 of long side length edges joined at each end by a pair of short side width edges, said long side  
edges approximately equal to the diameter of said entrance end of said tip passage;

c) said tip passage configured to generally maintain the outline of said  
rectangular dispensing tip opening throughout a substantial distance of the dispensing tip  
passage whereby the length edge distance of said rectangular opening is maintained generally  
20 constant throughout the substantial length of said dispensing tip while the passage  
substantially tapers to the width of said rectangular opening from said inlet end of said  
dispensing tip.

2) The improvement of claim 1 wherein said dispensing passage has a first surface  
25 adjacent and extending from said short side edges which is generally flat and a second  
surface extending from said long side edges which is generally curvilinear.

3) The improvement of claim 1 further including a spray guide tab protrusion extending  
longitudinally from each long side edge of said rectangular opening, each spray guide tab  
30 having an exposed circumferential edge extending from the intersection of one short side  
edge with a long side edge of said rectangular opening to the intersection at the opposite end  
of said one long side edge with the other one of said short side edges.

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4) The improvement of claim 3 wherein said circumferential edge of said fan tab is curvilinear.

5) The improvement of claim 4 wherein said dispensing passage has a first surface adjacent and extending from said short side edges which is generally flat and a second surface extending from said long side edges which is generally curvilinear.

6) A removable, throw-away nozzle for a two-component polyurethane spray gun having a face surface with outlets through which the polyurethane components are dispensed under pressure when said gun is activated, said nozzle comprising:

a longitudinally extending, hollow inlet chamber section with a latch and sealing mechanism for sealingly attaching and removing said nozzle to said outlets in said gun face;

a generally cylindrical, longitudinally extending, hollow mixing chamber section extending from said inlet chamber and containing a static mixer therein and;

a hollow dispensing tip longitudinally extending from said mixing chamber, said tip having a rectangular opening in its exposed end defined by generally parallel long side edges intersecting a pair of generally parallel short side edges, said hollow forming a tip passage longitudinally extending from the intersection of said tip with said mixing chamber to said rectangular opening, said tip passage having generally straight first surfaces substantially tapering from said short side edges of said rectangular opening towards said intersection of said dispensing tip with said mixing chamber and intersecting with a second tapering surface extending from said long side edge of said rectangular opening towards said intersection of said dispensing tip with said mixing chamber, said second surfaces having a generally constant length equal to said long side edges.

7) The nozzle of claim 6 wherein said long side length is approximately equal to the diameter of said exit end of said mixing chamber end and said dispensing passage has a first surface adjacent and extending from said short side edges which is generally flat and a second surface extending from said long side edges which is generally curvilinear.

8) The nozzle of claim 7 further including a spray guide tab protrusion extending longitudinally from each long side edge of said rectangular opening, each spray guide tab

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having an exposed circumferential edge extending from the intersection of one short side edge with a long side edge of said rectangular opening to the intersection at the opposite end of said one long side edge with the other one of said short side edges.

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5        9)        The nozzle of claim 8 wherein said circumferential edge of said fan tab is curvilinear.

10)        The nozzle of claim 6 wherein said latch mechanism fixes said nozzle to said gun face surface at a set relationship thereto and said long side edges are vertical whereby a fan shaped, vertically extending, rectangular spray pattern results when said gun is held in its normally operating position with said long edges vertical.

11)        A polyurethane foam dispensing gun comprising:

15            a)        a gun body having a pair of longitudinally extending laterally spaced rod passages terminating at one axial end in a valved opening formed in cup-shaped protrusions extending from a generally flat nose surface on said gun body, each rod passage in fluid communication with a feed passage carrying components of polyurethane foam and containing a spring biased metering rod with seals at a spaced distance from said valved opening and axially movable in said rod passage by an operator controlled triggering mechanism;

20            b)        a nozzle mounted to said front face having a longitudinally extending inlet chamber section adjacent said front face, a generally cylindrical mixing section adjacent said inlet chamber section and a dispensing tip section adjacent said mixing section;

25            c)        said dispensing tip having a rectangular opening at its end defined by long and short side edges through which mixed polyurethane components are discharged from said gun, said dispensing tip having an interior dispensing passage longitudinally extending from said mixing chamber section to said rectangular opening, said passage having a substantially constant height surface extending from said long side edges and approximately equal to the diameter of said mixing chamber, said height surface tapering from said mixing chamber section to said short side edges.

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12)        The gun of claim 11 wherein said dispensing passage has a first surface adjacent and extending from said short side edges which is generally flat and a second surface extending

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from said long side edges which is generally curvilinear.

13) The gun of claim 11 further including a spray guide tab protrusion extending longitudinally from each long side edge of said rectangular opening, each spray guide tab having an exposed circumferential edge extending from the intersection of one short side edge with a long side edge of said rectangular opening to the intersection at the opposite end of said one long side edge with the other one of said short side edges.

14) The gun of claim 11 wherein said circumferential edge of said fan tab is curvilinear.

15) The gun of claim 11 wherein said inlet chamber section has a backplate adjacent said front face with a pair of cup shaped recesses formed therein receiving said protrusion, each cup having an inner sealing rib and a concentric outer sealing rib at its base for sealingly contacting the front end of each protrusion.

16) The gun of claim 15 wherein said outer sealing rib is sized to deform more readily than said inner sealing rib.

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